

High hopes for Angola's pre-salt potential



Interview with Paulino Jerónimo, Vice-President, Angolan National Committee of WPC and Executive Vice-President, Sonangol



How do you see the prospects for Angola's pre-salt oil resources? When is production from the blocks awarded in 2011, and those expected to be awarded this year, likely to start?

From a Declaration of Commercial Discovery (DCD) until first oil, the turnaround to put an oil field into production is four to seven years – so, for instance, the Cameia oil field, in block 21, is supposed to begin production in 2017, while the 2011 awards blocks will start production more or less seven years after DCD.

How similar is Angola's pre-salt to Brazil's, and what lessons can Angola learn from the Brazilian experience so far?

The Angola and Brazil sedimentary acreage are twin Basins, and used to be joined together in the continent of Pangaea 250 million years ago. Along the Neocomian Geological Edge, 250 million years ago, there began the opening of the Atlantic South (Rift Phase), over a period of fifty million years, with the deposition of lacustrine shales in the Grabens (source rocks) and lacustrine carbonates in the top of the Horst, during the edge sin rift and saga phases (reservoir rocks) in both Basins. Taking into account that Petrobras drilled and discovered pre-salt oil first in Brazil, their experience is extremely important for Angola, as we have the same source rock and reservoir mode.

From a development and production perspective, there are valuable lessons from Brazil that we can apply to the Angolan case. For a start, they have been working in the pre-salt longer than we have. For instance, their approach in conducting extended well testing to better define the reservoir characteristics, behaviour and so forth, is something we can adapt to our own work.

Petrobras's current investment programme (much of it dedicated to exploring Brazil's pre-salt reserves) has placed the company under severe financial strain. What is the estimated cost of developing Angola's pre-salt resources, and how will the country fund this development?

The estimated cost of developing Angola's pre-salt reserves can be worked-out using the so-called 'Value Pyramid'. According to the pyramid, the pre-salt blocks will generate a seismic cost of US\$1 billion, with a further US\$10 billion going to fund exploration wells,

and US\$100 billion on development, with an expected value of US\$1 trillion of oil revenue recoverable.

Looking at the technical challenges, how much harder will it be to develop Angola's pre-salt resources than the country's current oil production, which is mostly in deep water?

In term of exploration, the new technology such as "Broad Band", Bi-Directional Drilling and Wide Azimuth, generate high resolution imaging, reducing the risk of dry wells, as required by the Sonangol Concessionaire responsible for oil exploration in Angola.

The first discoveries of oil and gas in the pre-salt are being achieved in new areas where logistical infrastructure and support is practically non-existent along the coast. There will be a need to construct new docks or ports, heliports, drilling mud plants, cement and chemical product storage facilities, etc. Environmental constraints are also expected to impose a number of challenges.

What about the associated gas? Angola now has an LNG facility which uses its associated gas – will increased oil production require the expansion of this LNG plant?

It is a possibility, but may we also use gas for other applications such as power generation plants in other parts of the country, etc.

How will the exploration of the pre-salt affect the country's local content and 'Angolanisation' policies?

The pre-salt exploration activity will require a surge in the development of local Angolan companies, in terms of local G&G Centres, local services companies and so on.

There will be expansion of local fabrication yards, more involvement of the local companies in the oil and gas business. There are plans for massive recruitment of talent, along with plans to support local universities with their programmes in the development of petrotech personnel. Many students are being sent abroad for scholarship programmes. In addition, we are preparing personnel by means of job assignments with international oil companies, both in and outside the country, in order to prepare and equip them with the competencies we will require to meet the challenges in developing the pre-salt. ■